

**University of Mumbai  
Institute of Distance and Open Learning (IDOL)**

**MCA (IDOL) ENTRANCE TEST - 2009**

**Syllabus details & sample question paper  
of MCA Entrance Examination.**

**1) Eligibility**

**Min. Qualification:** Graduate in any faculty of a statutory University with minimum 45% marks (minimum 40% for reserved category) and Mathematics at XII or higher level.

There will be an Entrance test for the admission in MCA course.  
( Entrance test will have 100 questions and two hours duration)

Admissions are open to citizens of India residing in India only. NRI & Foreign students whether residing in India or abroad are not eligible.

***The students who have appeared for final year and whose results are awaited are eligible for Entrance Test only.***

2) MCA Admissions will be done on the basis of Entrance Test only. Entrance Test forms are available on our **website www.mu.ac.in from 1<sup>st</sup> June to 15<sup>th</sup> June, 2009**. Entrance Test will be held on **Sunday, 21<sup>st</sup> June, 2009 from 11.00 a.m. to 1.00 p.m.** at

***Institute of Distance and Open Learning (IDOL),  
University of Mumbai,  
Vidyanagari,  
Santacruz (E),  
Mumbai – 400 098.***

3) Entrance Test Forms can be download from our website & **submit in person** at above address along with **Demand Draft of Rs.500/- ( From any Nationalized bank) towards Entrance Test fee in favour of 'Institute of Distance & Open Learning, University of Mumbai' payable at Mumbai only.**

4) **Timings** :- 11.00 a.m. to 2.30 p.m. from Monday to Friday (Except Public Holidays)

**MCA (MASTER OF COMPUTER APPLICATIONS)**

**Course Structure**

MCA (Master of Computer Applications) is a six semesters (Three Years) Master's degree program University of Mumbai has been started from the academic year 1992 & started through Institute of Distance & Open Learning from 2005-2006. The course is designed to provide comprehensive knowledge of computer science, with emphasis on applications. It has courses in computer science, mathematical science and management. The 6th Semester is dedicated to the project work, to be done in the industry. During sixth semester student will have to undergo a project work in Industry under the guidance of external as well as internal guide. Semester wise subjects and practical have been defined in the course structures. Since the courses are pertaining to cutting edge technology, the response from students is overwhelming. And more over it needs problem solving skills, reasoning & managerial skills.

The Institute Organizes Personal Contact Programmes (Guidance Lectures & practicals) for the benefit of students, in the evening at various colleges from 6.00 to 8.00 p.m. from Monday to Friday and practical held on Saturday, Sundays/Holidays in Mumbai only. **Minimum 75% Attendance for lectures and Practical are compulsory.**

### **Entrance Examination**

The admission to the course is given through the Entrance Examination conducted by the University of Mumbai, Institute of Distance & Open Learning every year. The entrance examination for admission to the M.C.A. Course consists of a written test of 100 Marks (Two Hours). The paper is prepared to test logical, analytical abilities & problem solving skills of students.

### **Syllabus details & sample question paper of MCA Entrance Examination**

The MCA ENTRANCE examination comprises of one paper (objective type) of 120 minutes duration. Medium of entrance test examination is English. Paper consisting of Multiple choice questions. There will be no negative marking.

### **Syllabus**

The questions in this paper will cover: logical reasoning, quantitative reasoning, high school mathematics, vocabulary, English comprehension and verbal ability

**General Aptitude:** The main objective of this section is to assess the general aptitude of the candidate to pursue a computer applications and software profession.

**Algebra :** Fundamental operations in Algebra, Expansion, factorization, Quadratic equations, indices, logarithms, arithmetic, geometric and harmonic progressions, binomial theorem, permutations and combinations.

**Probability and Statistics:** Basic concepts of probability theory, Averages, frequency distributions, and measures of dispersions and skew ness Binomial, Poisson, normal distributions, curve fitting, and principle of least squares, correlation and regression.

**Arithmetic:** Ratios and proportions, problems on timework, distance-speed, percentage.

**Basic Set Theory and Functions:** Set, relations and mappings.

**Mensuration:** areas, triangles and quadrilaterals, area and circumference of circles, volumes and surface areas of simple solids such as cubes, spheres, cylinders and cones.

**Computer Basics :** Organization of a computer, Central Processing Unit (CPU), Structure of instructions in CPU, input / output devices, computer memory, memory organization, back-up devices.

**Data Representation:** Representation of characters, integers, and fractions, binary and hexadecimal representations, Binary Arithmetic: Addition, subtraction, division, and multiplication.

**Computer Language:** Assembly language and high-level language, Multiprogramming and time-sharing operating systems, Computer Programming in C.

### **Sample Questions**

- Q1. Three friends divided some bullets equally. After all of them shot 4 bullets the total number of bullets remaining is equal to the bullets each had after division. Find the original number divided  
 a) 20 (b) 17  
 c) 18 (d) 30
- Q2. Which of the following is not one of the three basic categories of tasks a computer can perform?  
 (a) Arithmetic operations (b) Comparison operations  
 (c) Storage and retrieval operations (d) Printing operations
- Q3. If you started a business in which you earned Rs.1 on the first day, Rs.3 on the second day, Rs.5 on the third day, Rs.7 on the fourth day, & so on. How much would you have earned with this business after 50 years (assuming there are exactly 365 days in every year)?  
 a) Rs.333,062,500 (b) Rs.323,062,500  
 c) Rs.303,062,500 (d) Rs.313,062,500
- Q4. \_\_\_\_\_ consists of the physical components of a computer system.  
 (a) Software (b) A program  
 (c) Hardware (d) Data
- Q5. \_\_\_\_\_ consists of facts that have not been organized in a meaningful way.  
 (a) Information (b) A program  
 (c) Data (d) Output
- Q6. At 6'o a clock ticks 6 times. The time between first and last ticks is 30 seconds. How long does it tick at 12'o clock.  
 a) 60 Sec (b) 47 Sec  
 c) 66 Sec (d) 50 Sec
- Q7. Mr. Subramaniam rents a private car for Andheri-Colaba-Andheri trip. It costs him Rs. 300 everyday. One day the car driver informed Mr. Subramaniam that there were two students from Bandra who wished to go from Bandra to Colaba and back to Bandra. Bandra is halfway between Andheri and Colaba. Mr. Subramaniam asked the driver to let the students travel with him. On the first day when they came, Mr. Subramaniam said, "If you tell me the mathematically correct price you should pay individually for your portion of the trip, I will let you travel for free." How much should the individual student pay for their journey?  
 a) 50 (b) 17  
 c) 48 (d) 30
- Q8. What part of the central processing unit performs mathematical computations?  
 (a) Secondary Storage (b) Arithmetic Logic Unit  
 (c) Control Unit (d) Primary Storage Unit
- Q9. If 7 men make 7 pent in 7 days, then 1 men will make one pent in how many days?  
 (a) 1 (b) 7/2  
 (c) 7 (d) 49
- Q10. A worker earns a 5% raise. A year later, the worker receives a 2.5% cut in pay, & now his salary is Rs. 22702.68  
 What was his salary to begin with?  
 (a) Rs.21176 (b) Rs.22176  
 (c) Rs.22500 (d) Rs.20507
- Q11. If 9 examiners can examine a certain number of answer books in 12 days, working 5 hours a day; for how many hours a day would four examiners have to work in order to examine twice the number of answer books in 30 days?  
 (a) 6 (b) 8  
 (c) 9 (d) 10

- Q12. If  $\frac{3}{5}$  of the cistern is filled in one minute, how much more time will be required to fill the rest of it  
 (a) 30 sec (b) 40 sec  
 (c) 36 sec (d) 24 sec
- Q13. If 5 engines consumes 6 metric tones of coal when each is running 9 hours a day, how many metric tones of coal will be needed for 8 engines, each running 10 hours a day, it being given that 3 engine of the former type consumes as much as 4 engine of the later type?  
 (a)  $\frac{25}{8}$  (b) 8  
 (c)  $\frac{80}{9}$  (d)  $\frac{162}{25}$
- Q14. Some persons can do a piece of work in 12 days. Two times the number of such persons will do half of that work in  
 (a) 6 days (b) 4 days  
 (c) 3 days (d) 12 days
- Q15. A truck covers a distance of 550 meters in 1 minutes whereas a bus covers a distance of 33 kms in 45 min. The ratio of their speed is  
 (a) 3 : 4 (b) 4 : 3  
 (c) 3 : 5 (d) 50 : 3
- Q16. A persons travel equal distance with speed of 3 km/hr, 4 km/hr, 56 km/hr & takes a total time of 47 minute. The total distance is  
 (a) 2 (b) 3  
 (c) 4 (d) 5
- Q17. A car traveling with  $\frac{5}{7}$  of its actual speed cover 42 km in 1 hr 40 min 48 sec. Find the actual speed of the car  
 (a) 26 km/hr (b) 25 km/hr  
 (c) 35 km/hr (d) 396 km/hr
- Q18. Excluding stoppages, the speed of the bus is 54 km/hr & including stoppages, it is 45 km/hr. For how many minutes does the bus stop per hour?  
 (a) 9 (b) 10  
 (c) 12 (d) 20
- Q19. Three persons are walking from a place A to another place B. Their speed are in the ratio of 4 : 3 : 5. The time ratio to reach the B by these persons will be  
 (a) 4 : 3 : 5 (b) 5 : 3 : 4  
 (c) 15 : 9 : 20 (d) 15 : 20 : 12
- Q20. If the mean of n observations  $1^2, 2^2, 3^2, \dots, n^2$  is  $\frac{46n}{11}$ , then n is equal to  
 (a) 11 (b) 12  
 (c) 23 (d) 22
- Q21. If the two lines of regression are  $2x + y = 7$  &  $x + 2y = 7$ , then  $\rho(X, Y)$  is equal to  
 (a)  $\frac{1}{2}$  (b)  $-\frac{1}{2}$   
 (c)  $\frac{1}{4}$  (d) none of these
- Q22. Mean deviation from the mean for the observation -1, 0, 4  
 (a) 3 (b)  $\frac{2}{3}$   
 (c) 2 (d) none of these
- Q23. The range of the following set of observation 2, 3, 5, 9, 8, 7, 6, 5, 7, 4, 3 is  
 (a) 11 (b) 7  
 (c) 5.5 (d) 6
- Q24. If the mean of number 27, 31, 89, 107, 156 is 82, then the mean of 130, 126, 68, 50, 1 is  
 (a) 75 (b) 157  
 (c) 82 (d) 80

